

STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Steve Roberts

TDEC-DWS Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

K00003253 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

K00003253001

Project Name:

Sample Description:

Rockwood WTP

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected:

01/04/2010 08:40

Sampler's Name:

Geoff Klein ROANE - 73

County: Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-DWS

Billing Code: Send Report To: Agency Invoiced:

327.39-12 **TDEC-DWS** TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010 14:38

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	93	mġ/L	3.8	10	M Chen	1/8/2010	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	62	mg/L	0.7	1	M Chen	1/6/2010	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253002

Project Name:

Sample Description:

Rockwood WTP

Sampler Project Name: Finish

Project Site No.: Station No.:

Date/Time Collected:

01/04/2010

Geoff Klein

Sampler's Name: County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced: **TDEC-DWS** TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010

14:38

08:45

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:							
Total Alkalinity	91	mg/L	3.8	10	M Chen	1/8/2010		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	62	mg/L	0.7	1	M Chen	1/6/2010	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253003

Project Name:

Sample Description: Kingston WTP

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected:

01/04/2010

Geoff Klein

Sampler's Name: County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010

14:38

09:25

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	53	mg/L	3.8	10	M Chen	1/8/2010

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D				<u>.</u>	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	40	mg/L	0.7	1	M Chen	1/6/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253004

Project Name:

Sample Description:

Kingston WTP

Sampler Project Name: Finish

Project Site No.: Station No.:

Date/Time Collected:

01/04/2010 09:30

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS

327.39-12

Send Report To: Agency Invoiced: TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010

14:38

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:						
Total Alkalinity	55	mg/L	3.8	10	M Chen	1/8/2010	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	41	mg/L	0.7	1	M Chen	1/6/2010	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Steve Roberts

TDEC-DWS Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

K00003253 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Ynalytical Supervisor

K00003253001

Project Name:

Sample Description:

Rockwood WTP

Sampler Project Name: Raw

Project Site No.: Station No.:

Date/Time Collected:

d:

01/04/2010 08:40

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73 Water

EFO: Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-DWS 327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010

14:38

Received By:

E McCrary

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	01/06/2010				A Wilson	1/6/2010	

Field Determinations

CFS

Chlorine, residual:

Conductivity:

Temperature: Dissolved Oxygen:

pH:

Other:

Flow:

TEST: ICP-MS	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/7/2010
Barium	37	μg/L	2.5	5	M Pattanayek	1/7/2010
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/7/2010
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/7/2010
Chromium	U	μg/L	2.0	5	M Pattanayek	1/7/2010
Cobalt	U	μg/L	0.04	1	M Pattanayek	1/7/2010
Lead	U	μg/L	0.10	1	M Pattanayek	1/7/2010
Manganese	12	μg/L	0.42	1	M Pattanayek	1/7/2010
Selenium	U	μg/L	1.3	5	M Pattanayek	1/7/2010
Thallium	0.052J	μg/L	0.03	1	M Pattanayek	1/7/2010
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/7/2010

TEST: Mercury						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	1/8/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253002

Project Name:

Sample Description:

Rockwood WTP

Sampler Project Name: Finish

Project Site No.: Station No.:

Date/Time Collected:

01/04/2010 08:45

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-DWS

Send Report To:

327.39-12 TDEC-DWS

Agency Invoiced: **Priority Date:**

TDEC-DWS

Date/Time Received:

01/04/2010

14:38

Received By:

E McCrary

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/06/2010				A Wilson	1/6/2010

TEST: ICP-MS	ME ⁻	METHOD: EPA 200.8		DD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/7/2010		
Barium	32	μg/L	2.5	5	M Pattanayek	1/7/2010		
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/7/2010		
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/7/2010		
Chromium	U	μg/L	2.0	5	M Pattanayek	1/7/2010		
Cobalt	U	μg/L	0.04	1	M Pattanayek	1/7/2010		
Lead	U	μg/L	0.10	1 -	M Pattanayek	1/7/2010		
Manganese	0.50J	μg/L	0.42	1	M Pattanayek	1/7/2010		
Selenium	U	μg/L	1.3	5	M Pattanayek	1/7/2010		
Thallium	U	μg/L	0.03	1	M Pattanayek	1/7/2010		
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/7/2010		

TEST: Mercury	WE.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	1/8/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253003

Project Name:

Sample Description:

Kingston WTP

Sampler Project Name: Raw

Project Site No.: Station No.:

Date/Time Collected:

01/04/2010 09:25

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code: Send Report To: Agency Invoiced: 327.39-12 TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010

14:38

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/06/2010				A Wilson	1/6/2010

TEST: ICP-MS	ME	THOD: EPA 200	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/7/2010	
Barium	25	μg/L	2.5	5	M Pattanayek	1/7/2010	
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/7/2010	
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/7/2010	
Chromium	U	μg/L	2.0	5	M Pattanayek	1/7/2010	
Cobalt	U	μg/L	0.04	1	M Pattanayek	1/7/2010	
Lead	0.16J	μg/L	0.10	1	M Pattanayek	1/7/2010	
Manganese	34	μg/L	0.42	1	M Pattanayek	1/7/2010	
Selenium	U	μg/L	1.3	5	M Pattanayek	1/7/2010	
Thallium	U	μg/L	0.03	1	M Pattanayek	1/7/2010	
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/7/2010	

TEST: Mercury	ME'	THOD: EPA 24				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	1/8/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003253004

Project Name:

Sample Description:

Kingston WTP

Sampler Project Name: Finish

Project Site No.:

Station No.:

Date/Time Collected:

01/04/2010 Geoff Klein

09:30

Sampler's Name: County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS 327.39-12

Billing Code: Send Report To: Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/04/2010 14:38

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other: Flow:

CFS

TEST: Digestion Metals	ME	METHOD: EPA 200.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/06/2010				A Wilson	1/6/2010

TEST: ICP-MS	MET	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/7/2010
Barium	24	μg/L	2.5	5	M Pattanayek	1/7/2010
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/7/2010
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/7/2010
Chromium	U	μg/L	2.0	5	M Pattanayek	1/7/2010
Cobalt	U	μg/L	0.04	1	M Pattanayek	1/7/2010
Lead	U	μg/L	0.10	1	M Pattanayek	1/7/2010
Manganese	U	μg/L	0.42	1	M Pattanayek	1/7/2010
Selenium	U	μg/L	1.3	5	M Pattanayek	1/7/2010
Thallium	U	μg/L	0.03	1	M Pattanayek	1/7/2010
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/7/2010

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	1/8/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit